

1    **ABSTRACT OF DISCLOSURE:**

2           An arrangement in passenger vehicles, that diverts the impact energy in impacts away  
3           from the passengers to the remaining mass of the vehicle thereby protecting the passengers, and in the same  
4           arrangement provides utilitarian access to the vehicle, such utilitarian access making it possible to both install  
5           multi-element contoured surround seats for passengers and the driver, and also a safety device for head-on  
6           collision protection that obviates the need for conventional seat belts and front impact airbags. An indo-skeletal  
7           structural arrangement proposed for the vehicle, provides further benefits by targeting the strength of the vehicle  
8           to protect passengers while minimizing other massive elements in the vehicle.  
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DRAFT



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A NEW PARADIGM  
FOR  
SAFETY IN CARS

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Abstract

Slider seat mounting architecture facilitates a new approach to side impact protection by decoupling the passenger from the vehicle mass under impact. Further protection in side impact is provided by external proactive airbag systems. Side impact crash simulation results for some embodiments of the new architecture show that for the worst case scenario of a failure in external proactive airbags and active inflation of internal airbags, a 74% reduction in HIC, a 63% reduction in upper body peak acceleration (TTI) a 75% reduction in Pelvic acceleration and a (preliminary) 77% reduction in AIS3+ injury, can be realized relative to conventional automobile architecture in a FMVSS214 side crash test. Normal operation with proactive external airbags and inflated internal airbags are expected to improve on this performance to a level that targets a zero injury tolerance in crash standards. Further, slider seats facilitate convenient vehicle egress and ingress and provide the enabling architecture for a new approach to frontal impact and roll over protection.

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